1 CLAIMS

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3   What is claimed is:

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5   1.   A data processing system having recording means
6   for recording relationships between objects where recording
7   is done using object identifiers which are uniform in layout
8   across all object types and furthermore where identifiers
9   include the object type descriptor and an object number.

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11   2.   The data processing system of Claim 1, wherein the
12 object number of the object identifier is a system-key
13 (SYSKEY), relative row number or other such row address
14 which allows for direct access to the object data.

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16   3.   The data processing system of Claim 1, wherein
17 objects can be recorded only after a definition has been
18 entered allowing for the object type to exist.

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20   4.   The data processing system of Claim 3, wherein new
21 object types can be entered by a user based on supplied
22 object classes at any time during the life of the system and
23 does not require programmatic changes or recompilation.

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25   5.   The data processing system of Claim 4, where
26 Object Classes provided are based on common entities used in
27 commercial applications.

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29   6.   The data processing system of Claim 1, wherein
30 relationships between objects can be recorded only after a
31 definition has been entered allowing for the relationship
32 type to exist between the two or more object types.

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34   7.   The data processing system of Claim 6, wherein new
35 allowed relationship definitions can be entered by a user at
36 any time during the life of the system and does not require
37 programmatic changes or recompilation.

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1   8.   The data processing system of Claim 1, which

2 allows for inquiries to be formulated to follow existing

3 relationships from one entity type to another within the set

4 of defined allowed relationships, and for execution of such

5 inquiries.

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7   9.   The data processing system of Claim 8, which

8 allows individual inquiries to have their own access

9 security independent of other inquiries and be attached to

10 separate menus.

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12   10.   A database system in which entities are stored in

13 a finite set of relative tables (one for each object class),

14 relationships are stored in a finite set of tables, and the

15 meaningful interpretation of these two sets of tables is

16 provided by schema definitions stored in another finite set

17 of tables (RelDef and EntDef).

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19   11.   A machine-implemented database system comprising:

20   (a)   entity recording means for recording data

21 representative at least of a first entity instance

22 belonging to a first entity class and a second entity

23 instance which belongs either to the first entity class

24 or a second eneity class;

25   (b)   relation recording means, logically linked to

26 the entity recording means, for recording first data

27 identifying the first entity instance, second data

28 which is opposed to the first data and identifies the

29 secon entity instance and third data which is opposed

30 to the first and second data and identifies one or more

31 distinct relations which link the first entity instance

32 to the second entity instance; and

33   (c)   relation reporting means, operatively coupled

34 to the relation recording means, for examining data

35 recorded in the realtion recording means according to a

36 search algorithm based on one or two of the first

37 through third data, for identifying the opposed two or

38 one of the first through third data and for reporting

1   the identity of said opposed two or one

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3   12. The system of Claim 11 wherein the entity

4   recording means comprises:

5   (a.1) a plurality of Entity-instances (Ei) tables

6   each for recording data representative of entity

7   instances which belong to an entity class associated

8   with that Ei table; and

9   (a.2) an Entity-class defining table for

10   recording entity-class data representative of distinct

11   entity classes and opposed to such entity-class data,

12   EiT data identifying one Ei table where all instances

13   of the corresponding entity-class are recorded.

14

15   13. The system of Claim 12 wherein the relation

16   recording means comprises:

17   (b.1) a plurality of Relation-instances (Ri)

18   tables each of recording data representative of the

19   distinct relations between the first and secon entity

20   instances and for associating each of the relations

21   with a distinct relationship class; and

22   (b.2) a Relation-class defining table for

23   recording relation-class data representative of each

24   relation-class data representative of each relation

25   class and opposed to such relation class data, RiT data

26   indentifying one Ri table where all instances of the

27   corresponding relation-class are recorded.

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29   14. A method for defining in a computerized database

30   system, relations between entitities, the method comprising:

31   recording first data defining a first entity

32   class;

33   recording second data defining a second entity

34   class;

35   recording third data defining a first group of

36   entity instances belonging to the first entity class;

37   recording fourth data defining a second group of

38   entity instances belonging to the second entity class;

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1   and

2   recording fifth data expressly defining a   .

3   relationship instance and connecting said relationship

4   instant to an instance of the first entity class and to

5   an instance of the second entity class.

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